



045-0189-00

M70209

## 11301A FIRMWARE REPLACEMENT

For the following TEKTRONIX® instrument:

11301A      All Serial Numbers

This kit contains parts and instructions that replaces the firmware in the 11301A Programmable Oscilloscope. The firmware is upgraded to version ~~3.1~~.

1.1

**KIT PARTS LIST:**

<b>Ckt Number</b>	<b>Quantity</b>	<b>Part Number</b>	<b>Description</b>
	1 ea	020-1718-XX	Component Kit:Ver 1.1 Consisting of the following:
U1330	1 ea	160-4204-10	Microckt,dgtl:NMOS,EPROM ver 1.1
U1430	1 ea	160-4205-10	Microckt,dgtl:NMOS,EPROM ver 1.1
U1400	1 ea	160-4206-10	Microckt,dgtl:NMOS,EPROM ver 1.1
U1100	1 ea	160-4207-10	Microckt,dgtl:NMOS,EPROM ver 1.1
U1200	1 ea	160-4208-10	Microckt,dgtl:NMOS,EPROM ver 1.1
U1300	1 ea	160-4209-10	Microckt,dgtl:NMOS,EPROM ver 1.1
U1000	1 ea	160-4294-10	Microckt,dgtl:NMOS,EPROM ver 1.1
U1230	1 ea	160-4295-10	Microckt,dgtl:NMOS,EPROM ver 1.1

**WARNING**

Dangerous shock hazards may be exposed when the instrument covers are removed. Before proceeding, ensure the mainframe power switch is in the off position. Then, disconnect the instrument from the power source. Disassembly should only be attempted by qualified service personnel.

**NOTE**

These instructions assume a familiarity with the instrument. If additional assembly or disassembly details are required, refer to the 11301A Service Reference Manual.

**CAUTION**

Many components within the 11300 Series mainframe are extremely susceptible to static-discharge damage. Service the instrument only in a static-free environment. Observe standard handling precautions for static-sensitive devices while installing this kit. Always wear a grounded wrist strap.

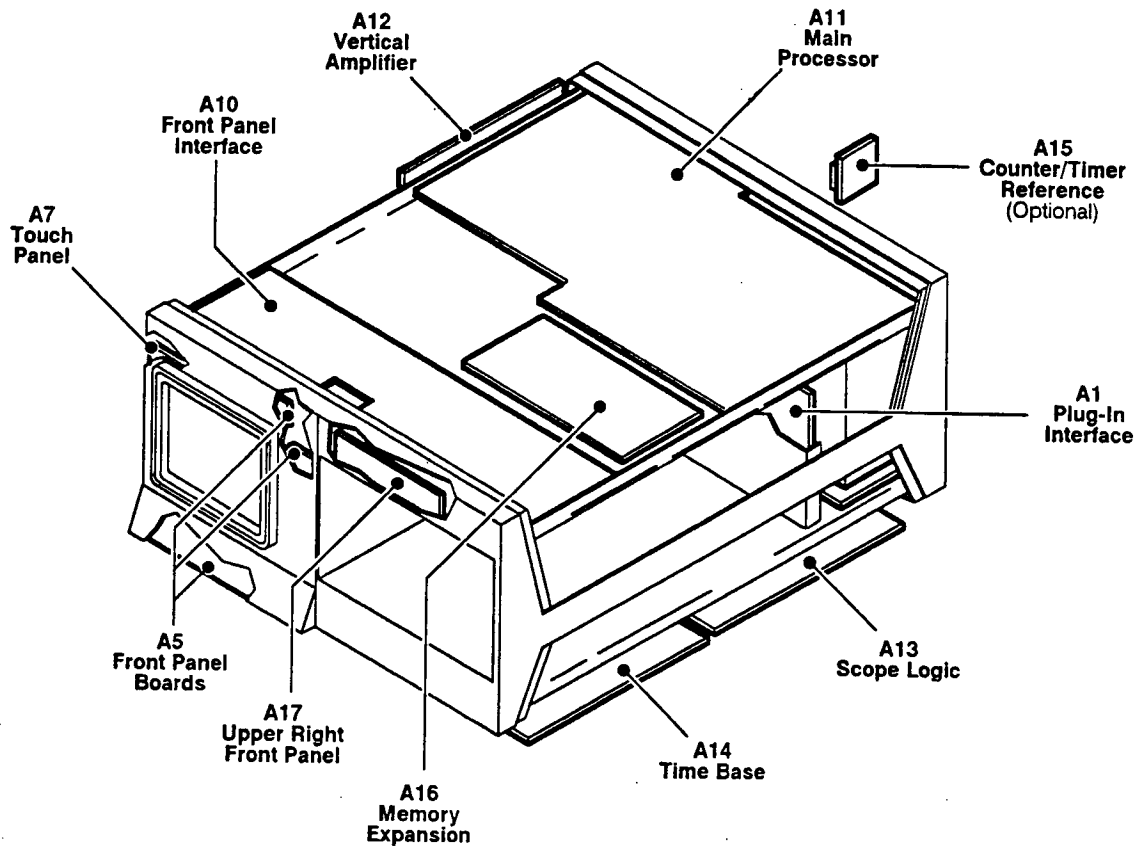


Figure 1. - Circuit Board locations.

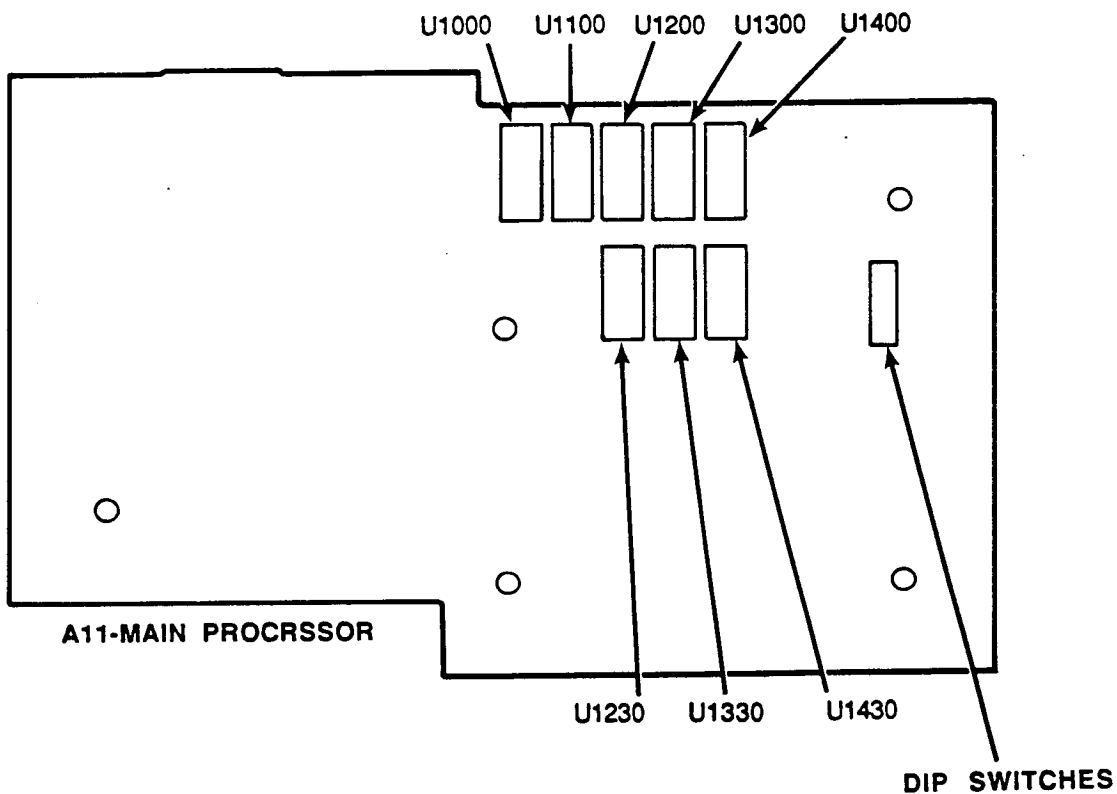


Figure 2. - EPROM locations, Main Processor ckt bd A11

**NOTE**

Run Enhanced Accuracy and Extended Diagnostics and verify that there are no other failures. Repair all failures before replacing firmware.

- 1. Turn the slotted fasteners on the top dust cover one quarter turn counter clockwise. Then remove the dust cover by lifting away from the instrument.

**NOTE**

Position the instrument with the bottom of the instrument (Time Base circuit board A14) is facing up towards the installer.

**NOTE**

Refer to Figure 1, while performing steps 2 through 10, in this section.

- 2. Set number 2, number 4, and number 5 DIP switches on the Main Processor circuit board A11, to their closed positions.

**NOTE**

Be certain that pin 1 is positioned correctly when replacing EPROM's.

- 3. Replace U1000, U1100, U1200, U1230, U1300, U1330, U1400, and U1430 with the new EPROM's that are provided in this kit. Refer to Figure 2, for EPROM locations.
- 4. Turn the instrument POWER SWITCH to ON. Initially the PROCESSOR diagnostic (BBR Quick) test will fail; this will only occur during the first power-up sequence following the firmware installation.
- 5. Press the Display Adjust Menu button and wait for the screen message **Diagnostics are complete.**
- 6. Connect an RS-232-C terminal or a GPIB controller to the instrument.
- 7. Press the DISP ADJ button and set FOCUS, ASTIGMATISM, and TRACE ROT
- 8. Press the ENHANCED ACCURACY button twice.
  - a. If the instrument passes, proceed to the next step.
  - b. If the instrument fails to do an successful EA, run the GRAT-PREP procedure, Test List No. 24 in the CATS disk (Computer Aided Test Software).
  - c. If the instrument fails, try it again. If it still fails, refer to "Restoring Factory Calibration" and try it again. If it still fails, refer to the Main Processor board information in "Checks After FRU Replacement."

- 9. Turn the POWER SWITCH to OFF.
- 10. Set number 2, number 4, and number 5, DIP switches on the Main Processor circuit board A11 to there open positions.
- 11. Replace the top dust cover removed in step 1.
- 12. For future reference fasten the attached Manual Modification Insert in the Service Reference manual.

# **TEKTRONIX**

## **MANUAL MODIFICATION INSERT**

### **11301A FIRMWARE REPLACEMENT**

for

**11301A Programmable Oscilloscope All Serial Numbers**

This modification insert is provided to supplement the manual for the above listed product(s). The information given in this insert supersedes that given in the manual.

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### **GENERAL INFORMATION**

This kit contained parts and instructions that replaces the firmware in the 11301A Programmable Oscilloscope. New firmware version 3.1 was installed with this upgrade. The following insert pages describes the new firmware features included with this upgrade.

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COMMITTED TO EXCELLENCE

## MANUAL CHANGE INFORMATION

Date: 18-Jan-90 Change Reference: M70209 Rev-1

Product: 11300 Series User Ref Manual

Manual Part No.: See Below

Product Group: 47

### DESCRIPTION

11301/11302: manual part No.: 070-6106-00

The new features are for firmware version 3.1

Revised 9Feb90

11301A/11302A: manual part No.: 070-7175-00

The new features are for firmware version 1.1

Add this new display to page 2-151:

The MEASURE major menu display has been changed as shown below:

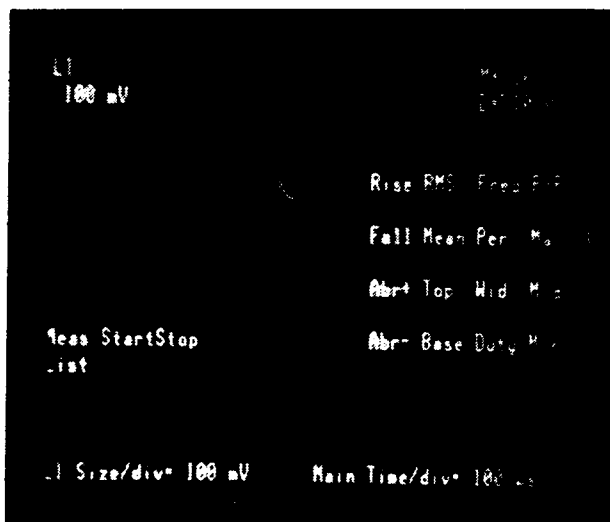


Figure 2-74. Measurement choices shown above.

Add the following text to page 2-152:

MEASUREMENT MENU, when auto measurements of rise time and fall time are being made, and the signal that is being measured is too fast or too noisy, the following statements will appear. In the place of the rise time or fall time the statements **too fast** or **too noisy** will be displayed.

Product: User Ref Manual Part No.: 070-7175-00 Date: 18-Jan-90 Change Ref.: M70209

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Add this new display to page 2-162:  
The STORE RECALL major menu display has been changed as shown below:

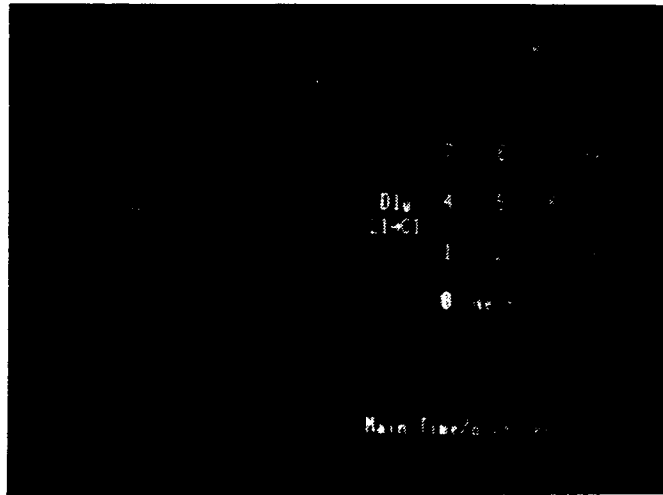


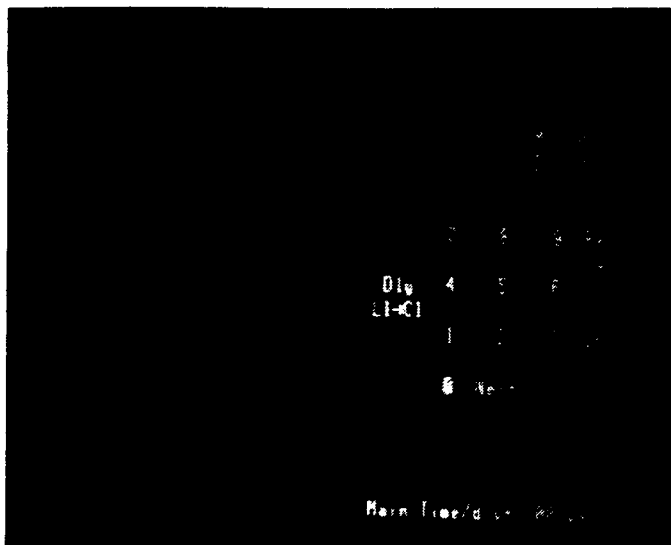
Figure 2-79. Non-volatile stored settings menu selections.



Product: User Ref Manual Part No.: 070-7175-00 Date: 18-Jan-90 Change Ref.: M70209

Add this new feature to page 2-162, 070-6106-00  
Add this new feature to page 2-163, 070-7175-00

## STORE AND RECALL MENU



New Feature:  
**Dly**  
**L1—»C1**

When L1—»C1 is selected on the store recall menu the scope will automatically setup to measure prop delay between signals on the left CH 1 and center CH 1. When this command is initiated the present scope setup will be lost.

New Feature:  
**RECALL DLYL1C1**

RS 232 & GPIB commands. Entering command RECALL DLYL1C1 over the buss will initiate the Dly L1—»C1.

Add this new feature to page 3-86:

## RECALL COMMAND

Selecting DLYL1C1 as argument will display the prop delay setup L1 TO C1.